

Digital Transformation in Civic Education: Advancing Digital Citizenship through Values-Based Learning - A Conceptual Review

Muhammad Muslim Hidayatulloh ^{1,*}, Winarno ¹, Dewi Ika Sari ¹, and Nesliani Paotonan ²

¹ Pancasila and Citizenship Education, Sebelas Maret University, Surakarta, Indonesia

² Pancasila and Citizenship Education, Cenderawasih University, Jayapura, Indonesia

*Email: muhammadmuslim@staff.uns.ac.id

Abstract

The fast growth of digital technology has changed how education works, including Civic Education, which helps make citizens responsible and involved in society. In today's digital world, Civic Education has to not only use technology in teaching but also make sure that using digital tools is based on knowing what's right, being responsible, and supporting democracy. This study looks at how changing to digital teaching methods in Civic Education can help students become better digital citizens by using a learning approach that focuses on values. The study uses a detailed review of existing research and ideas to gather information from articles, government policies, and real-world studies about digital change, civic education, digital citizenship, and teaching values. The research shows that using digital teaching methods like blended learning, flipped classrooms, project-based learning, and interactive digital tools can help students improve their civic skills, their ability to think critically about digital content, and their sense of responsibility online. It also shows that learning based on values helps students handle problems like fake news, divided opinions online, and shallow engagement with digital content. This study highlights the need for teachers to act as guides who encourage thinking and active learning, connecting civic values with digital activities. The ideas from this study help build better Civic Education programs that support digital citizenship and provide high-quality education, which connects to important goals like improving education (Goal 4), promoting peace and justice (Goal 16), and reducing inequality (Goal 10).

Keywords: Digital Transformation, Civic Education, Digital Citizenship, Values-based Learning, Quality Education

SDGs: Goal 4 (Quality Education), Goal 16 (Peace, Justice, and Strong Institutions), Goal 10 (Reduced Inequalities)

Manuscript History

Received: August 30, 2025

Revised: December 30, 2025

Accepted: February 16, 2026

How to cite:

Hidayatulloh, M.M., Winarno, Sari, D.I., & Paotonan, N. (2026). Digital Transformation in Civic Education: Advancing Digital Citizenship through Values-Based Learning - A Conceptual Review. *International Journal of Research and Community Empowerment*, 4(1), 72-80. DOI: <https://doi.org/10.58706/ijorce.v4n1.p72-80>.

INTRODUCTION

Ideal education in the twenty-first century requires a fundamental transformation in the ways learning is designed, delivered, and evaluated. The advancement of teaching methodologies and technologies that enhance the competencies of the twenty-first century through education-related research and innovation (Alainati & Al-Hunaiyyan, 2024). Rapid developments in information and communication technology have expanded learning environments beyond physical classrooms into digital spaces that are flexible, interactive, and rich in information access (Katara, 2023). This transformation positions digitalization as a critical foundation for building educational systems that are adaptive, responsive to learners' needs, and aligned with contemporary

societal changes (Dash, 2022). However, the effectiveness of digital education is not determined solely by access to technology, but by the depth and quality of its pedagogical utilization.

In the Indonesian context, the Indonesian Digital Society Index (IMDI) reflects both progress and emerging challenges in digital transformation (Hermawan et al., 2024). The IMDI increased from 37.80 in 2022 to 43.18 in 2023, largely due to initiatives aimed at strengthening digital infrastructure, literacy, and digital ecosystems (Afriadi, 2024; Candra et al., 2021; Furbani et al., 2025). The infrastructure and ecosystem pillar, in particular, rose from 40.24 to 57.09 during this period. Nevertheless, in 2024, overall IMDI growth stagnated at 43.34, accompanied by a decline in the infrastructure and ecosystem pillar to 52.70. This trend suggests that the initial acceleration of digital access has reached a saturation point, highlighting the need for strategies that move beyond expanding infrastructure toward strengthening users' competencies and meaningful engagement with digital technologies. The data indicate a persistent gap between the availability of digital infrastructure and users' capacity to optimally utilize digital tools for educational purposes (Sarkawi et al., 2025; Rediani et al., 2021).

These conditions have significant implications for Civic Education, which plays a strategic role in preparing learners to participate responsibly in social and democratic life (Putri et al., 2025). In a digital culture characterized by speed, immediacy, and information overload, Civic Education faces challenges in maintaining relevance and depth of meaning. Core civic values, such as responsibility, tolerance, justice, and respect for diversity, require reflective, dialogical, and contextual learning processes to be meaningfully internalized (Candra et al., 2021; Zhang et al., 2022). However, digital environments often intensify challenges related to misinformation, disinformation, polarized discourse, and ethically detached online interactions. Empirical studies indicate that intensive online learning has hindered the internalization of civic values, particularly when learning designs lack interactive and reflective components and when students' critical digital literacy remains weak (Safitri et al., 2023; Lumbantobing et al., 2020).

These challenges demonstrate that technology integration in education is not merely a matter of tools or platforms but is deeply connected to pedagogical orientation and instructional design (Phuong et al., 2023; Hermawan et al., 2024). Digital transformation should not be understood simply as replacing printed learning materials with digital media; rather, it represents a systemic shift in interaction patterns, the role of teachers, and students' meaning-making processes (Hava & Gelibolu, 2018). In Civic Education, this shift requires pedagogical strategies that integrate civic values with contextual, creative, and participatory digital learning experiences (Johannesen et al., 2024; Li et al., 2025). Teachers are therefore positioned not only as users of technology but as facilitators of reflective learning who embed ethical reasoning and civic responsibility within digital practices (Mansour, 2024).

A growing body of research has explored the use of digital media and learning models in Civic Education, including interactive platforms, digital learning materials, and online instructional approaches. Studies have shown that digital resources can enhance student engagement and support learning outcomes (Gani & Saddam, 2020), emphasize the importance of teachers as moral role models in digitally mediated environments (Prasetyo et al., 2023) and highlight the role of digital literacy in strengthening civic awareness among younger generations (Sarkawi et al., 2025). These approaches allow learners to actively participate in discussions, simulations, and problem-based activities that foster critical thinking and civic competencies. Furthermore, the integration of digital learning models provides flexibility and accessibility, enabling Civic Education to be more responsive to diverse learner needs and contemporary societal challenges (Chen & Huang, 2024). Other studies have identified persistent challenges in values internalization within online and polysynchronous learning contexts, particularly when instructional designs prioritize efficiency over reflection and ethical dialogue (Sugiarto & Farid, 2023). As a result, learners may demonstrate adequate cognitive understanding of concepts while lacking deeper moral reasoning and affective engagement. This condition underscores the need for pedagogical designs that intentionally integrate reflective practices, deliberative dialogue, and value-based learning experiences within digital (Mansour, 2024). Despite these contributions, much of the existing literature remains concentrated on the technical effectiveness of digital tools rather than on the pedagogical integration of values that shape responsible digital civic behavior.

Despite the growing body of research on digital learning and technology integration in Civic Education, a critical gap remains insufficiently addressed. Most existing studies focus on the operational or technical dimensions of digital media use, while paying limited attention to how values-based learning can systematically guide digital transformation in Civic Education (Allouche, 2024; Azis & Ahmad, 2022). Research on digital citizenship often emphasizes competencies such as digital skills, information literacy, and online safety, yet rarely examines how civic values function as the central pedagogical foundation for

responsible and participatory engagement in digital spaces (Agus et al., 2025). Consequently, there is a lack of integrative conceptual frameworks that explicitly connect digital transformation, civic values, and the advancement of digital citizenship (Afriadi, 2025; Carmi et al., 2025). This gap indicates the absence of a coherent theoretical perspective that positions values not as peripheral learning outcomes, but as the core driver of digital citizenship development within Civic Education.

To address this gap, the present study offers a conceptual examination of digital transformation in Civic Education with a specific focus on advancing digital citizenship through values-based learning. This study moves beyond a technocentric perspective by emphasizing the integration of civic values, critical digital literacy, and reflective pedagogy within digitally mediated learning environments. Through a systematic review of relevant literature and conceptual analysis, this article seeks to clarify the theoretical foundations of digital transformation in Civic Education, identify values-oriented digital learning strategies, and analyze the opportunities and challenges associated with cultivating digital citizenship in contemporary educational contexts. The findings are expected to contribute to the development of Civic Education models that support quality education and responsible citizenship in alignment with Sustainable Development Goal 4 (Quality Education).

METHOD

This study used a qualitative approach called an integrative conceptual literature review. The focus was on academic work about digital transformation in Civic Education, digital citizenship, and values-based learning. The sources reviewed included peer-reviewed articles, scholarly books, and relevant policy documents. No people were involved in this study. An integrative review was chosen because it helped bring together different ideas, theories, and research findings to create a full picture of values-based digital Civic Education. This method was better suited for understanding concepts, finding connections between theories, and building a framework that shows how values-based learning affects digital transformation and digital citizenship. The literature was gathered through a careful search of academic databases like Google Scholar, ERIC, and open-access Scopus-indexed journals. The search used keywords such as digital transformation, Civic Education, citizenship education, digital citizenship, values-based learning, civic values, and digital literacy. To keep things current and relevant, only publications from 2015 to 2025 were included. More sources were found by looking at references from important papers. The selection focused on academic quality and relevance, and papers that were only about technical or software topics without any educational or civic connection were not included. Data analysis was done using thematic content analysis and then conceptual synthesis. The study used categories like different forms of digital transformation in Civic Education, values-based teaching methods, and key aspects of digital citizenship such as critical digital literacy, behaving ethically online, participating in civic activities, and learning through reflection as ways to compare and understand the studies. These themes were brought together to look at how values-based learning acted as a bridge between digital transformation and the development of digital citizenship. To make sure the analysis was strong and trustworthy, the researchers compared findings from actual studies, theories, and policy documents. They kept things clear by carefully recording every step of their research process and used reflective thinking to consider different contexts and any shortcomings in the studies they looked at. They followed all the rules for ethical research and properly cited all sources to show honesty in their work. Since the study only used existing data from publicly available sources, it didn't need official approval, and the authors took full responsibility for how they interpreted and combined the information.

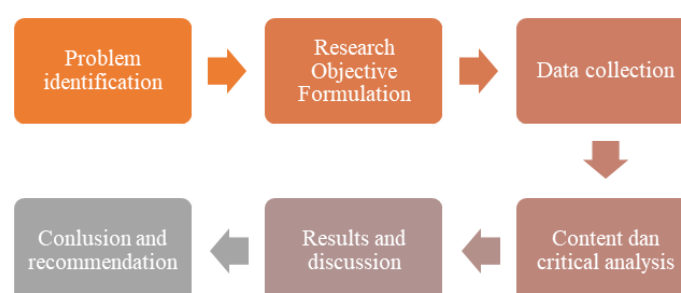


Figure 1. Research Procedures

Figure 1 illustrates the research procedures. Based on Figure 1, the research starts by identifying the problem, which is figuring out the main issue by looking at the difference between what should be and what is actually happening. This step helps set the direction for the research. After that, the researcher creates clear goals that match the problem they've identified. Then, data is collected using methods that fit the type of research being done.

Once the data is gathered, it's analyzed using content and critical methods along with theories that are relevant to the topic. This helps create a deeper understanding of the subject. The findings from the analysis are shared in the results and discussion section, where they are explained and connected to existing theories and earlier studies. Finally, the research ends with conclusions and suggestions that summarize the key points and show how they can be used in real-life situations or for future research.

RESULTS AND DISCUSSION

The integrative review indicates that digital transformation in Civic Education shifts the learning focus from the transmission of civic knowledge to participatory, value-mediated learning experiences. The reviewed literature does not frame digital technology as an autonomous driver of learning outcomes. Instead, it is understood as an enabling environment whose influence depends on pedagogical orientation. Studies on digital transformation further suggest that technology becomes genuinely transformative only when it reshapes learning interactions, redefines teacher roles, and influences the broader culture of learning (Phuong et al., 2023; Allouche, 2024). In Civic Education, this restructuring manifests in learning designs that prioritize reflection, dialogue, and civic engagement rather than content delivery alone.

The results also show that learning based on values plays a key role in connecting digital transformation with the growth of digital citizenship. Even though digital platforms offer chances to participate and access information, the studies show that just having access doesn't lead to responsible behavior online. Instead, values like fairness, acceptance, responsibility, and respect for different viewpoints influence how people understand digital content, take part in online discussions, and act on civic matters in digital environments. (Lee, 2021). These civic values also help learners understand how power works, spot false information, and see unfair ideas in digital content. This makes them better at making smart and fair decisions. When learners learn about fairness, acceptance, and being responsible, they become more able to take part in online communities in a positive way and support democratic values in the digital world. (Zhang et al., 2022). This pattern appears in studies highlighting digital literacy interventions that explicitly integrate ethical reasoning and civic reflection, suggesting that digital citizenship emerges through value-guided engagement rather than technical competence.

Another common thing found is how important teachers are in helping schools switch to using digital tools. Studies show that when teachers use technology effectively in Civic Education, they're not just using gadgets, but making learning experiences that match real-life situations and helping students understand what is right and wrong. Research on how teachers use digital tools shows that good teaching with technology needs more than just knowing how to use the tools. It also needs teachers to think carefully, act in an honest way, and care about people (Fitzgerald et al., 2021). These findings demonstrate that the success of digital Civic Education is strongly influenced by teachers' capacity to align digital activities with civic values and learning objectives. This underscores the need for sustained professional development that integrates digital competence with ethical and civic pedagogy. Without such preparation, digital tools risk being used superficially, limiting their potential to support meaningful civic learning (Agus et al., 2025).

At the same time, the findings show there is ongoing conflict between the benefits and dangers of digital learning. These online tools help students work together, get involved in community issues, and learn in more engaging ways. However, they also put students at risk of coming across false or misleading information and extreme views. Research shows that students who aren't very skilled at using digital tools have trouble judging information that is emotional or spreads quickly online. This makes them more likely to misunderstand important social and political topics. (Carmi et al., 2020). This tension highlights that digital transformation in Civic Education is inherently ambivalent and requires deliberate pedagogical strategies to mitigate risks while maximizing civic learning potential. Therefore, Civic Education must prioritize critical media literacy and ethical reasoning as core components of digital learning. Strengthening these competencies enables students to navigate complex digital environments with discernment and civic responsibility (Sari et al., 2024).

The results of this study suggest the need for a more thorough look at how digital transformation works in the field of Civic Education. Instead of being a simple or neutral process, digital transformation is shown to be a teaching-related event that is influenced by certain values and goals. This means the effect of digital tools

in education depends heavily on the ideas and purposes that are built into how lessons are designed. Many past studies have focused on digital transformation in terms of efficiency, access, or student involvement, but these views don't fully explain how digital tools affect things like civic actions and personal development (Phuong et al., 2023; Allouche, 2024). In the context of Civic Education, digital transformation must therefore be understood as a value-laden process that directly influences how learners interpret citizenship and participation in digital spaces.

From a theoretical point of view, this study argues that learning based on values helps bridge the gap between how people interact online and how they become responsible digital citizens. Online spaces aren't neutral; they are shaped by hidden rules and power struggles. Information is presented, debated, and shared in ways that reflect these underlying values. If students aren't taught about values, they might learn digital skills without developing a strong sense of ethics or responsibility. This idea matches research on critical digital literacy, which shows that just teaching technical skills isn't enough to deal with bigger issues like understanding meaning, taking responsibility, and being accountable in online communities. (Furbani et al., 2025). Accordingly, values-based learning provides the interpretive framework through which digital participation becomes civically meaningful.

Digital citizenship, in this sense, should not be conceptualized merely as a set of technical competencies or behavioral rules but as a civic identity constructed through value-guided participation in digital public spheres. Scholars such as (Elsayed et al., 2023) emphasize participatory democracy and ethical awareness as core dimensions of digital citizenship. Based on this idea, this study suggests that civic values, especially those found in Pancasila, act as mental and moral tools that help students assess information, spot bias, and understand different views with empathy. Learning through values is the main part of digital citizenship, not just an extra part. It gives learners a sense of right and wrong, and the ability to think critically in digital spaces that are full of different opinions and fast-moving information. With this base, digital citizenship education goes beyond just knowing how to use technology, and instead focuses on developing people who are ethical, responsible, and actively involved in their communities. (Zheng et al., 2024).

A key implication of this framework is the reconceptualization of teachers' roles within digitally transformed Civic Education. Rather than acting as neutral facilitators of technology use, teachers emerge as moral pedagogical architects who design learning environments that integrate digital engagement with civic reflection. Teacher digital competence, as articulated by (Johannesen et al., 2024) encompasses reflective and humanistic dimensions that are essential for character education. In Civic Education, teachers mediate students' encounters with contested narratives, moral dilemmas, and socio-political issues circulating in digital spaces. Their pedagogical decisions determine whether digital platforms function as arenas for civic deliberation or merely as channels for accelerated information consumption.

The mixed feelings around digital environments make the process of changing education through technology even more complicated. Digital spaces offer more chances for people to get involved, but they also bring bigger risks like false information, divided opinions, and not thinking deeply. Instead of seeing these risks as problems to avoid, this study looks at them as natural challenges that come with teaching digital citizenship. Studies on things like being distracted by digital tools and not thinking deeply about information show that taking things at face value can stop people from really thinking and learning. (Putri et al., 2025). However, when framed through values-based pedagogy, such challenges can be transformed into learning opportunities that cultivate critical evaluation, ethical reasoning, and empathy.

In this context, metaliteracy provides an integrative framework for advancing values-based digital Civic Education. Metaliteracy emphasizes reflective awareness of bias, positionality, and responsibility in both consuming and producing digital content (Mackey & Jacobson, 2021). Integrating metaliteracy into Civic Education learning supports the development of students who are not only digitally competent but also ethically accountable and civically engaged. This approach addresses the limitations of conventional digital literacy models that prioritize functional skills over moral and civic dimensions. By foregrounding metacognitive reflection, metaliteracy enables students to critically examine the social consequences of their digital actions. As a result, Civic Education can more effectively cultivate responsible participation in digital public spaces (Witek & Grettano, 2014).

Digital transformation in Civic Education also necessitates a redefinition of assessment practices to ensure coherence between technological innovation and values-based learning goals. Traditional assessments that emphasize factual recall or task completion fail to capture students' civic reasoning and ethical reflection in digital contexts. Authentic assessment models, such as reflective journals, digital portfolios, and project-based evaluations, allow educators to observe how students apply civic values when engaging with digital

information and participating in online discourse. Through such assessments, evaluation becomes an integral part of the learning process that reinforces digital citizenship rather than merely measuring academic (Hermawan et al., 2024) These assessment approaches also encourage continuous self-reflection and formative feedback, supporting the internalization of civic values in digital practices. Consequently, assessment functions not only as an evaluative mechanism but as a pedagogical strategy for cultivating responsible and ethical digital citizens (Tirza et al., 2025).

Another important aspect is the cultural and social background where digital Civic Education takes place. How people participate in online spaces is influenced by their cultural stories, past experiences, and the values their country holds dear. In Indonesia, Pancasila serves as a key guide that sets Civic Education apart from models that ignore local values or focus only on global ideas. Including these values in digital learning helps ensure that technology doesn't weaken cultural identity or bring people apart. Instead, it helps students feel more connected and responsible in both their country and online communities. (Bowyer & Kahne, 2020). This contextual grounding enables students to interpret digital civic issues through locally relevant moral and social lenses. As a result, digital Civic Education can balance global connectivity with the preservation of national identity and social cohesion (Li et al., 2025).

Digital transformation changes how power works in the classroom by giving students more control and a bigger say. Digital tools let students share their thoughts, work together, and get involved more in discussions about society. When teachers use learning approaches that focus on values, this growing influence helps students learn in ways that support democracy and active involvement in community matters. But if there's no focus on ethics, more digital involvement can lead to division, unfair treatment, or just showing off rather than real participation. So, learning based on values acts as a way to guide how students use their growing influence, making sure it supports fair and responsible participation in society (Afriadi, 2024). Moreover, values-based pedagogy establishes ethical boundaries that guide students' digital participation. This integration encourages reflective and responsible civic engagement rather than superficial involvement (Vallès-Peris & Domènech, 2024)

Finally, the sustainability of digital transformation in Civic Education depends on its integration into long-term educational ecosystems, not on short-term technological adoption. Rapid innovation often leads to fragmented practices that emphasize novelty rather than pedagogical coherence. Values-based learning provides continuity by grounding digital innovation in enduring civic principles. This approach allows educators and institutions to respond to technological change while maintaining the core mission of Civic Education. Consequently, digital transformation functions as a sustained process of civic development rather than a temporary instructional trend.

This study provides some helpful ideas, but there are some things to be aware of. First, since it's a review based on ideas rather than real classroom experiences or input from people involved, it's hard to know if the ideas work well in actual schools. Second, the research mostly comes from certain areas and types of schools, which might make it harder to use the findings in different places with different cultures, rules, and ways of life. Third, even though the study talks about using values in teaching digital citizenship, it doesn't give clear ways to measure if those values are really being understood and used by students. Future research should look into these ideas using real data, either through detailed stories, numbers, or a mix of both. It's also important to check how these ideas work in different schools and to create good tools to measure if values are being properly taught in digital citizenship programs. These steps would help make the ideas more useful for teachers and people making education policies.

This study connects strongly with Sustainable Development Goal 4, which focuses on providing quality education. It especially highlights the importance of learning that is inclusive, relevant, and meaningful in today's digital world. By making values-based learning the main part of how digital changes happen in Civic Education, this research helps improve education in ways that go beyond just knowing facts and using technology well. Quality education, as SDG 4 aims for, should help students develop critical thinking, understand right and wrong, and feel responsible for their actions in society. The framework suggested here supports this by mixing digital skills with important values, helping learners think carefully about information they find online, take part actively in their learning, and build knowledge that fits their situation and helps others. In this way, digital changes become a way to make education better by developing skills that are important for lifelong learning and being a responsible member of society.

In addition, the study helps achieve SDG 16 (Peace, Justice, and Strong Institutions) and SDG 10 (Reduced Inequalities) by focusing on digital citizenship and fair civic participation. Teaching students values-based digital civic education gives them the skills and ethics needed to use digital spaces responsibly, fight against

false information, respect different viewpoints, and take part in meaningful discussions. These are key to building fair and peaceful societies. Also, including digital skills and civic values in education helps reduce inequalities caused by the digital divide. It gives students from different backgrounds the tools to take part equally in digital civic life. By using inclusive teaching methods and encouraging thoughtful engagement, this study helps lower social and participation gaps. It ensures that digital changes in education do not make existing inequalities worse, but instead help everyone have equal access to civic knowledge, opportunities to speak up, and the ability to take part in democracy.

CONCLUSION

This study examined how digital transformation in Civic Education can foster responsible digital citizenship through a value based learning approach. The findings indicate that the use of digital tools alone does not automatically produce ethical and active digital citizens; rather, their impact depends on the deliberate integration of civic values into pedagogy, curriculum, and student engagement. Technology is most effective when guided by moral and educational purposes, not merely by technical features. By positioning value based learning as a bridge between digital instruction and the development of reflective, ethical, and participatory digital citizenship, this study explains why similar digital tools may lead to different civic outcomes across contexts. Pedagogically, Civic Education in the digital era should emphasize value integration, critical reflection, active participation, and assessment of ethical reasoning, while institutional efforts should align digital competencies with values education. As a conceptual study, this research offers a theoretical framework that requires empirical validation across diverse educational levels and cultural settings, the development of reliable and valid measurement instruments, longitudinal investigations of value internalization, and experimental or mixed method studies that examine the effectiveness of specific pedagogical interventions in strengthening values based digital citizenship.

AUTHOR CONTRIBUTION

Muhammad Muslim Hidayatulloh: Conceptualization, Writing – Original Draft, Writing – Review & Editing, and Formal Analysis; **Dewi Ika Sari:** Methodology and Writing – Review & Editing; **Winarno:** Methodology, Validation, and Writing – Review & Editing; and **Nesliani Paotonan:** Writing – Review & Editing and Formal Analysis. All authors read and approved the final version of the manuscript.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no financial conflicts of interest or personal relationships that could have influenced the results reported in this manuscript.

DECLARATION OF ETHICS

The authors declare that the research and writing of this manuscript adhere to ethical standards for research and publication, adhere to scientific principles, and are free from plagiarism.

DECLARATION OF ASSISTIVE TECHNOLOGIES IN THE WRITING PROCESS

The authors declare that Generative Artificial Intelligence (GAI) and other assistive technologies were not used extensively in the research and writing of this manuscript. Specifically, ChatGPT was used for brainstorming ideas, drafting and refining the text, and answering conceptual questions; and Deepseek was used for grammatical and stylistic correction, paraphrasing, and improving clarity and coherence. The authors have reviewed and edited all AI-generated content for accuracy, completeness, and adherence to ethical and scientific standards. The authors accept full responsibility for the final content of the manuscript.

REFERENCES

- Afriadi, B. (2024). The role of citizenship education in shaping awareness of democracy and political participation in the digital era. *International Journal of Business, Law, and Education*, 5(2), 2918-2924. DOI: <https://doi.org/10.56442/ijble.v5i2.1039>.
- Agus, A.A., Rizal, A., Muhajir, M., & Jamalong, A. (2025). From awareness to action: rethinking high school civic education for the digital generation in Indonesia. *Cogent Education*, 12(1), 2534156. DOI: <https://doi.org/10.1080/2331186X.2025.2534156>.
- Alainati, S., & Al-Hunaiyyan, A. (2024). The role of educational systems in developing the twenty-first century skills: perspectives and initiatives of gulf cooperation council countries. *Journal of*

- Research Administration*, **6**(1), 1252-1277. Retrieved from: <https://journlra.org/index.php/jra/article/view/1255>.
- Allouche, E. (2024). Digital transformation of education, systems approach and applied research. *ArXiv*. DOI: <https://doi.org/10.48550/arXiv.2406.11861>.
- Azis, A., Maftuhin, M., & Nugraha, D.M. (2021). Citizenship education in the Covid-19 era: How to become a digital citizen? *Jurnal Civics: Media Kajian Kewarganegaraan*, **18**(2), 207–216. DOI: <https://doi.org/10.21831/jc.v18i2.40833>.
- Azis, U.A. & Ahmad, M. (2022). Analysis of the effect of online-based interactive digital learning media Word Wall on Pancasila and Citizenship Education learning outcomes of elementary school students. *Jurnal Paedagogy*, **9**(3), 609-615. DOI: <https://doi.org/10.33394/jp.v9i3.5344>.
- Bowyer, B. & Kahne, J. (2020). The digital dimensions of civic education: Assessing the effects of learning opportunities. *Journal of Applied Developmental Psychology*, **69**, 101162. DOI: <https://doi.org/10.1016/j.appdev.2020.101162>.
- Candra, A.A., Suryadi, K., Rahmat, R., & Nurbayani, S. (2021). Digital citizenship infrastructure to foster the reinforcement of national identity in Indonesia. *Kultura-Społeczeństwo-Edukacja*, **19**(1), 37–50. DOI: <https://doi.org/10.14746/KSE.2021.19.3>
- Carmi, E., Yates, S. J., Lockley, E., & Pawluczuk, A. (2020). Data citizenship: Rethinking data literacy in the age of disinformation, misinformation, and malinformation. *Internet Policy Review*, **9**(2), 1481. DOI: <https://doi.org/10.14763/2020.2.1481>.
- Chen, H. & Huang, Y. (2024). The impact of digital learning platforms on student motivation in high school. *Journal of Education, Humanities and Social Sciences*, **39**, 391–395. DOI: <https://doi.org/10.54097/fab4wb46>
- Dash, B.B. (2022). Digital tools for teaching and learning english language in 21st century. *International Journal of English and Studies*, **4**(2), 8-13. Retrieved from: [https://www.ijoes.in/papers/v4i2/2.IJOES-Dr.Bipin\(8-13\).pdf](https://www.ijoes.in/papers/v4i2/2.IJOES-Dr.Bipin(8-13).pdf).
- Elsayed, H., Bradley, L., Lundin, M., & Nivala, M. (2023). Social and democratic values in school based health promotion: A critical policy analysis. *Cogent Education*, **10**(2), 2259477. DOI: <https://doi.org/10.1080/2331186X.2023.2259477>.
- Fitzgerald, J.C., Cohen, A.K., Castro, E.M., & Pope, A. (2021). A systematic review of the last decade of civic education research in the United States. *Peabody Journal of Education*, **96**(3), 235–246. DOI: <https://doi.org/10.1080/0161956X.2021.1942703>.
- Furbani, W., Purnawanti, F., Dewi, A. E. R., Sari, N., & Thoriq, T. (2025). Digital literacy and critical thinking skills of students in the era Industry 4.0. *Juwara: Jurnal Wawasan dan Aksara*, **5**(1), 136–148. DOI: <https://doi.org/10.58740/juwara.v5i1.382>.
- Gani, A.A. & Saddam, S. (2020). Pembelajaran interaktif pendidikan kewarganegaraan melalui mobile learning di era industri 4.0. *CIVICUS: Pendidikan-Penelitian-Pengabdian Pendidikan Pancasila dan Kewarganegaraan*, **8**(1), 36-42. DOI: <https://doi.org/10.31764/civicus.v8i1.1849>.
- Hava, K. & Gelibolu, M. F. (2018). The impact of digital citizenship instruction through flipped classroom model on various variables. *Contemporary Educational Technology*, **9**(4), 390–404. DOI: <https://doi.org/10.30935/cet.471013>.
- Hermawan, D., Darmawan, C., & Bestari, P. (2024). Transforming citizenship education in the digital era: challenges and opportunities for the Indonesian millennial generation. *Unnes Political Science Journal*, **8**(1), 30–38. DOI: <https://doi.org/10.15294/upsj.v8i1.5783>.
- Johannesen, M., grim, L., & Hatlevik, O. E. (2024). Teachers’ professional digital competence – The neglected management of technology-rich classrooms? *Nordic Journal of Digital Literacy*, **19**(2), 64–81. <https://doi.org/10.18261/njdl.19.2.2>
- Katara. (2023). *Twenty-first century skills: Educational best practices for education*. Cultural Village Foundation, Doha, Qatar: Katara.
- Lee, A. (2021). Civility and its discontents: Subway etiquette, civic values, and political subjectivity in global Taiwan. *Mobilities*, **16**(4), 476–492. DOI: <https://doi.org/10.1080/17450101.2021.1919492>.
- Li, L., Valdez, J.P.M., & Du, Y. (2025). Digital citizenship education at the early childhood level: how is it implemented? A systematic review. *International Journal of Child Care and Education Policy*, **19**, 13. DOI: <https://doi.org/10.1186/S40723-025-00153-2>.

- Lumbantobing, M.T., Samosir, A., & Tarigan, D.R.B. (2020). Tantangan pembelajaran daring selama pandemi Covid-19. *EJoES (Educational Journal of Elementary School)*, 1(2), 33–36. DOI: <https://doi.org/10.30596/ejoes.v1i2.7187>.
- Mackey, T.P. & Jacobson, T.E. (2021). Metaliteracy and the perspectives of information science in the digital age. *University Libraries Faculty Scholarship*, 165. Retrieved from: https://scholarsarchive.library.albany.edu/ulib_fac_scholar/165.
- Mansour, N. (2024). Students' and facilitators' experiences with synchronous and asynchronous online dialogic discussions and e-facilitation in understanding the nature of science. *Education and Information Technologies*, 29(12), 15965–15997. DOI: <https://doi.org/10.1007/S10639-024-12473-W>.
- Pérez-Juárez, M.Á., González-Ortega, D., & Aguiar-Pérez, J.M. (2024). Digital distractions from the point of view of higher education students. *Sustainability (Switzerland)*, 15(7), 6044. DOI: <https://doi.org/10.3390/su15076044>.
- Phuong, T.T.T., Nguyen, T.T., Danh, N.N., Van, D.N., Luong, H.D., Nguyen, L.V.A., & Tran, T. (2023). Digital transformation in education: A bibliometric analysis using Scopus. *European Science Editing*, 49, e107138. DOI: <https://doi.org/10.3897/ese.2023.e107138>.
- Prasetyo, W.H., Sumardjoko, B., Muhibbin, A., Naidu, N.B.M., & Muthali'in, A. (2023). Promoting digital citizenship among student-teachers: The role of project-based learning in improving appropriate online behaviors. *Participatory Educational Research*, 10(1), 389–407. DOI: <https://doi.org/10.17275/per.23.21.10.1>.
- Putri, A.K., Rahmawati, D.E., & Zainudin, A. (2025). Digital citizenship in the 21st century: Strengthening digital ethics. *CosmoGov: Jurnal Ilmu Pemerintahan*, 11(1), 92–109. DOI: <https://doi.org/10.24198/cosmogov.v11i1.60821>.
- Rediani, N.N., Palittin, I.D., & Kaize, B.R. (2024). Project based learning: Enhancing character and creative thinking skills through activity-based projects in numeracy literacy courses. *Indonesian Values and Character Education Journal*, 7(1), 88–100. DOI: <https://doi.org/10.23887/ivcej.v7i1.80139>.
- Safitri, W.Y., Ananda, A., Suryanef, S., & Putra, I. (2023). Pembelajaran daring dan permasalahannya pada mata pelajaran PPKn. *Journal of Education, Cultural and Politics*, 3(1), 179–185. DOI: <https://doi.org/10.24036/jecco.v3i1.27>.
- Sari, G., Winasis, S., Pratiwi, I., Nuryanto, U.W., & Basrowi. (2024). Strengthening digital literacy in Indonesia: Collaboration, innovation, and sustainability education. *Social Sciences & Humanities Open*, 10, 101100. DOI: <https://doi.org/10.1016/j.ssaho.2024.101100>.
- Sarkawi, D., Oktaviani, A., Priadi, A., & Nurhidayati. (2025). The impact of digital literacy in shaping civic awareness among the younger generation on social media platforms. *Journal of Basic and Applied Research International*, 31(5), 207–217. DOI: <https://doi.org/10.56557/jobari/2025/v31i59854>.
- Sugiarto, & Farid, A. (2023). Literasi digital sebagai jalan penguatan pendidikan karakter di era Society 5.0. *Cetta: Jurnal Ilmu Pendidikan*, 6(3), 580–597. DOI: <https://doi.org/10.37329/cetta.v6i3.2603>.
- Tirza, J., Tambunan, A., Parwati, N.N., & Cendana, W. (2025). Enhancing active citizenship: Developing assessment tools for digital literacy and critical thinking in Indonesian Civics Education. *REID (Research and Evaluation in Education)*, 11(1), 75–88. DOI: <https://doi.org/10.21831/reid.v11i1.83859>.
- Vallès-Peris, N., & Domènech, M. (2024). Digital citizenship at school: Democracy, pragmatism and RRI. *Technology in Society*, 76, 102448. DOI: <https://doi.org/10.1016/j.techsoc.2023.102448>.
- Witek, D. & Grettano, T. (2014). Teaching metaliteracy: A new paradigm in action. *Reference Services Review*, 42(2), 188–208. DOI: <https://doi.org/10.1108/RSR-07-2013-0035>.
- Yulin, N. & Danso, S. D. (2025). Assessing pedagogical readiness for digital innovation: A mixed-methods study. *ArXiv*. DOI: <https://doi.org/10.48550/arXiv.2502.15781>.
- Zhang, W., Chen, Z., Chia, Y.T., & Neoh, J.Y. (2022). Rethinking civic education in the digital era: How media, school, and youth negotiate the meaning of citizenship. *International Communication Gazette*, 84(4), 287–305. DOI: <https://doi.org/10.1177/17480485221094101>.
- Zheng, Y., Zhang, J., Li, Y., Wu, X., Ding, R., Luo, X., Liu, P., & Huang, J. (2024). Effects of digital game-based learning on students' digital etiquette literacy, learning motivations, and engagement. *Heliyon*, 10(1), e23490. DOI: <https://doi.org/10.1016/j.heliyon.2023.e23490>.